

**Amendments to the Specification:**

Please replace paragraph [0022] with the following amended paragraph:

[0022] As noted above in the Background section of this specification, AC voltammetry (ACV) and differential pulse voltammetry (DPV) are known electrochemical techniques used to detect analytes, such as heme, or other electro-active constituents in a sample. Particularly, a working electrode can be exposed to a sample, e.g., a fluid sample, that may contain a constituent to be tested for. The electrode is treated or coated with a compound to which the constituent of interest will bind. The presence of the constituent of interest on the electrode changes the electrical properties of the electrode. The electrode is then introduced into an electrochemical cell with at least one other electrode, i.e., a counter electrode (and typically also a third electrode, called the reference electrode). An electrical stimulus (voltage or current) is applied to the cell through the counter electrode. The response (current or voltage) by the cell is sensed at the working electrode; voltages are measured between the working electrode and the reference electrode. The response to the electrical input stimulus is, in theory, indicative of the presence or absence and/or the concentration of an electro-active constituent of interest. Co-pending U.S. patent application Ser. No. 10/640,984, filed 8/14/03, US Patent 6,805,789, issued 10/19/04 (~~Attorney Docket No. 1845-SPL~~) discloses a novel working electrode and a method of making such an electrode that has substantially improved properties compared to conventional electrodes. Particularly, as previously noted, a problem with conventional electrodes is that the coating or treatment that is particularly adapted to cause the electro-active constituent of interest to bind to the electrode degrades extremely quickly, typically, within no more than a day or two of coating. Accordingly, the coating had to be applied, the electrode exposed to the sample, and the electrochemical analysis completed all within one or two days.

Please replace paragraph [0023] with the following amended paragraph:

[0023] Aforementioned U.S. provisional patent Application No. 60/405,720 as well as U.S. non-provisional patent Application No. 10/640,984, filed 8/14/03, US Patent

6,805,789, issued 10/19/04 (~~Attorney Docket No. 1845-SPL~~), describe procedures to concentrate species such as heme from low concentration ( $10^{-9}\text{M}$ ) solutions onto electrode surfaces (metal, carbon, doped-silicon and conducting-polymers) that can be used to produce working electrodes for DPV or ACV in which the coating lasts a substantially longer period of time than previously possible. Accordingly, that invention substantially enhances the ability of medical personnel to use DPV or ACV in the field.

Please replace paragraph [0024] with the following amended paragraph:

[0024] The present invention is a sensor array particularly suited for simultaneously testing a large number of samples (e.g., about 100 samples each of less than 10 micro liter sample volume) in the field, or, alternately, simultaneously testing a single, large sample (e.g., about 1 milliliter sample volume) for a large number of different constituents in the field. Although the present invention as described in more detail below can be used with conventional working electrodes, the combination of the electrodes disclosed in aforementioned U.S. patent application Ser. No. 10/640,984, filed 8/14/03, US Patent 6,805,789, issued 10/19/04 (~~Attorney Docket No. 1845-SPL~~) with the present invention substantially enhances the ability to perform large-scale field testing for biological molecules or other constituents in samples.

Please replace paragraph [0028] with the following amended paragraph:

[0028] FIG. 2 is a detailed schematic of an individual sensor cell 112 in the array illustrated in FIG. 1. The sensor cell consists of a glass or plastic capillary 211. The capillary 211 may be cylindrical and contains essentially all of the other elements described herein below. The sample enters the sensor cell from the micro-channels through the top of the capillary 211. Within the capillary is a glass frit 213, which filters undissolved constituents from the sample before it reaches the electrically active portion of the sensor cell. Beneath the glass frit 213 is the sensitized working electrode 215, preferably manufactured in accordance with the invention described in aforementioned U.S. patent application Ser. No.

10/640,984, filed 8/14/03, US Patent 6,805,789, issued 10/19/04 (~~Attorney Docket No. 1845-SPL~~). Briefly, the working electrode may be formed of wire and, particularly, gold wire. However, other metals and alloys such as platinum, stainless steel and even non-metals, including, carbon, doped silicone, and conductive polymeric materials can be used as the electrode for the accumulation of constituents. In at least one embodiment of the invention, the working electrode comprises a thin (25- to 100-micron-diameter; 1-meter-long) gold wired coiled around a 0.25 to 0.5-mm-diameter gold support wire. In other embodiments of the invention, the working electrode may be formed of a powdered gold bound together by adhesive. The adhesive may be a mixture of carbon powder and polytetrafluorethylene adhesive. Treating the electrode surface first with dithiol as set forth in application Ser. No. 10/640,984, filed 8/14/03, US Patent 6,805,789, issued 10/19/04 (~~Attorney Docket No. 1845-SPL~~) sensitizes the surface to heme. Dithiol also equally sensitizes other surfaces to heme. The dithiol molecules have an inherent property to bind those surfaces at one end and to heme molecules on the other end. The dithiol molecules not only help to accumulate heme from the solution onto the electrode surface, but also aid the electronic transfer process between the heme and the electrode. Hence, they are also known as "linkers". If the species to be detected is other than heme, the surface should be sensitized with other types of linkers specific to the analyte or other constituent to be tested for in the solution. A recent review article by Lippa et al. (P. B. Lippa, L. J. Sokoll and D. W. Chan, "Immunosensors-principles and applications to clinical chemistry, Clinica Chimica Acta, Vol. 314, Year 2001, pp. 1-26.) and references therein provide descriptions of linkers suitable for various analytes commonly encountered in biological solutions.